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## Plant and Wastewater Characteristics

Very little historical data on toxic pollutants in wastewater effluent were available from individual wood preserving plants. The source of the toxic pollutant data presented in this section is analytical results from verification sampling programs conducted by the Agency. Characteristics of wood preserving plants which were visited and sampled during the 1975 Pretreatment Study and during the BAT review study are presented in Table V-5 for steam conditioning plants and in Table V-6 for Boulton plants.

Data from three sampling and analytical programs comprise the verification data base and are presented in Tables V-7 through V-20. Data for plants sampled during the 1975 Pretreatment Study represent the average of two or more grab samples collected at each plant. Data for plants sampled during the 1977 and 1978 verification sampling programs represent the average of three 24-hour composite samples collected at each plant. Unless otherwise noted, the raw wastewater sampling point at each plant was immediately following gravity oil-water separation.

Pollutant concentrations and raw waste loads for individual plants are shown in Tables V-7 through V-19. Variations in pollutant concentrations from plant to plant can be attributed to the degree of emulsification of oils in the wastewater, the type of oily preservatives or carrier solution used, i.e., creosote in coal tar, creosote in oil, pentachlorophenol in oil, etc., and the amount of nonprocess wastewater added to the process wastewater stream, i.e., boiler blowdown, rainfall, steam condensate, etc.

Metals data are presented separately in Tables V-16 and V-17 for plants which treat with oily preservatives only, and in Tables V-18 and V-19 for plants which also treat with inorganic preservatives at the same facility. Increased concentrations and waste loads for heavy metals, particularly copper, chromium, and arsenic, are apparent for plants which treat with both types of preservatives. Although the inorganic treating operations at these plants are for the most part self contained and produce little or no wastewater, the process wastewater from the organic treating operations contains heavy metals. This "fugitive metal" phenomenon is the result of cross contamination between the inorganic and organic treating operations. Personnel, vehicles, and soil which come in contact with heavy metals from the inorganic treating operations can transport the metals into the organic treating area where rainfall washes them into collection sumps. Some plants may also alternate organic and inorganic charges in the same retort, causing cross contamination.

Plants which treat with inorganic salts only are not allowed to discharge process wastewater under previously published regulations either to a navigable waterway or to a POTW. All but

a few of these plants recycle all their process water as dilution water for future batches of treating solution.

No plants treating with inorganic salts only were sampled during the verification sampling program. One such plant, however, was sampled once a week for one year in conjunction with the Pretreatment Study. The concentration range of COD, total phenols, heavy metals, fluoride, and nutrients found in the recycled wastewater at this plant are presented in Table V-20.